

Application No.: 09/980,665

2

Docket No.: 209565-82182

AMENDMENTS TO THE CLAIMS

1-15. (Cancelled)

16. (Currently amended) A sensor circuit for active-sensor scanning, comprising:

~~a magnet disposed about a sensor unit that a first housing containing only a~~
magneto-electric converter element for generating an electrical signal,

a second housing coupled to said first housing by way of a 4-pole electric connection,

wherein said first housing is coupled to a magnet, and wherein said second housing includes an electronic signal processing circuit for processing said electrical signal generated by said magneto-electric converter element, wherein said magneto-electric converter element is magnetically coupled to a magnetic encoder arranged in a sidewall of a magnetized tire, wherein the sensor unit magneto-electric converter element detects

wheel speed, and

dynamic deformation of an air gap between the sensor unit magneto-electric converter element and the magnetic encoder, and encodes the electrical signal with the wheel speed and air gap information.

17. (Canceled)

18. (Currently amended) The sensor circuit according to Claim ~~[[17]]~~16 further comprising

a control device; and

a first pin extending from the second housing; and

a second pin extending from the second housing, wherein the first and second pin are operatively coupled to the control device, wherein the second pin provides an operating voltage to the ~~sensor unit~~ electronic signal processing circuit, wherein the first pin provides a signal output from the sensor unit to the control device.

Application No.: 09/980,665

3

Docket No.: 209565-82182

19. (Previously presented) The sensor circuit according to Claim 16, wherein the encoder is a permanent-magnet-type encoder.

20. (Previously presented) The sensor circuit according to Claim 16, wherein the encoder is a ferromagnetic-type encoder.

21. (Currently amended) The sensor circuit according to Claim 16, wherein the wheel speed information and dynamic air gap deformation information are encoded into of an air gap is identified by a sinusoidal signal current generated by said electronic signal processing circuit amplitude range approximately equal to 11mA, plus or minus 4mA.

22. (Currently amended) A sensor circuit for active-sensor scanning, comprising:
~~a magnet disposed about~~ a sensor unit, including a magnet, unit that is
magnetically coupled to a magnetic encoder arranged in a sidewall of a magnetized tire,
a signal processing circuit coupled to said sensor unit, wherein the interaction
between relation of the magnet, [[and]] magnetic encoder, sensor unit, and the signal
processing circuit, results in the generation of a sinusoidal signal current by the signal
processing circuit which is sent provided to a control device of a brake system,
wherein [[the]] a frequency of the sinusoidal signal is indicative of
wheel speed, and wherein an amplitude of the sinusoidal signal is
indicative of dynamic deformation of an air gap between the sensor unit and the
magnetic encoder.

23. (Previously presented) The sensor circuit according to Claim 22, wherein the sinusoidal signal current is defined by an amplitude range approximately equal to 11mA, plus or minus 4mA.

24. (Currently amended) A sensor circuit for active-sensor scanning, comprising:
~~a magnet disposed about~~ magnetically coupled to a sensor unit wherein said
sensor and said magnet are that is magnetically coupled to a magnetic encoder arranged
in a sidewall of a magnetized tire,
a signal processing circuit coupled to said sensor unit.

Application No.: 09/980,665

4

Docket No.: 209565-82182

wherein the [[relation]] interaction between, [[of]] the magnet, [[and]] magnetic encoder, sensor unit, and a signal processing circuit, results in the generation of provides a sinusoidal current signal by the signal processing circuit, which sinusoidal current signal is sent to a regulating unit of a brake system, wherein said sinusoidal current signal is encoded with information relating to, indicative of at least

a torsion of said sidewall, ~~phase relation,~~

wheel speed, and

dynamic deformation of an air gap between the sensor unit and the magnetic encoder.

25. (Previously presented) The sensor circuit according to Claim 24, wherein the sinusoidal signal current is defined by an amplitude range approximately equal to 11mA, plus or minus 4mA.